CHAPTER 5

RULES OF THE ROAD

Operators of Navy vehicles are expected to practice *"courtesy on the road"* at all times toward other drivers as well as toward pedestrians. Courtesy distinguishes the efficient and safe driver from a poor driver. The driver who practices courtesy on the road is helping prevent mishaps with other vehicles and injuries to pedestrians. Road courtesies are part of the basic "rules of the road" that include procedures for driving under normal, hazardous, and special conditions.

Any information in this chapter is not to be construed as nullifying or superseding regulations or laws of another country, state, or municipal authority. For more information, see your license examiner or the *Navy Driver's Handbook*, NAVFAC MO-403; *Federal Motor Carrier Safety Regulations Pocketbook*, ORS-7A; and local instructions.

DEFENSIVE DRIVING

You have probably seen many examples of discourtesy on the road. Common traits often displayed by discourteous drivers include the following: impatience, road hogging, and excessive speed. A person with such characteristics may be knowledgeable about driving, but it takes more than knowledge when SAFETY is a concern. To achieve a good safety record, you must be a *"defensive driver"* at all times.

A defensive driver makes allowance for lack of skill and experience by other drivers and also learns to recognize mishap-producing situations far enough in advance to avoid them. The defensive driver yields to other drivers and yields the right-of-way, rather than risk a mishap. Defensive drivers understand their responsibilities and show proper respect for driving regulations and the rights of others.

As a professional Equipment Operator (EO), you should demonstrate a businesslike and courteous attitude, alert posture, and skilled performance when behind the wheel. You should handle the vehicle controls easily and smoothly and always be aware of the position of your vehicle in relation to other traffic. If you keep a safe distance from the vehicle ahead and obey the traffic control signals of the individual directing traffic, you will not have to abuse the brakes on your vehicle. You should always keep your vehicle in the proper lane, signal right and left turns in advance, and rarely have to make sudden stops.

AVOIDING REAR-END COLLISIONS

Most of the areas you will work in are considered industrial. In these areas, traffic is heavy most of the time. The size of the vehicles, combined with congestion of traffic, results in frequent rear-end collisions. Here are some precautions you can take to avoid rear-ending someone:

- Be sure you have enough room to stop at traffic control points.
- Keep enough distance between you and the vehicle in front of you at stops so that you can see their brake lights and taillights.
- Watch the movement of vehicles that are two and three vehicles ahead of you.

Precautions you can take to avoid someone rear-ending you are as follows:

- Ensure your brake and turn signals work properly.
- Use your mirrors and be alert to what is happening behind you.
- Do not stop suddenly if you can avoid it.
- Signal well in advance for stops, lane changes, and turns.
- Drive with the flow of traffic. Driving too slow can be as dangerous as driving too fast.

SPEED LIMITS

Speed is the cause of many mishaps. To avoid being fined or involved in an mishap, *obey the speed limits.*

NOTE: Speed limits indicate how fast you may drive under good conditions. Several statutes are in the law books covering speed limits; however, you are responsible for adjusting your speed to weather and road conditions.

CORRECTING A SKID

If a vehicle SKIDS, steer in the direction of the skid to regain control. Sometimes light pressure on the accelerator may help bring the vehicle under control. Do NOT apply brakes, because this may lock the wheels. Brakes, when used, should be applied lightly and released quickly if skidding begins. The way to correct for skidding is shown in figure 5-1.

DRIVING UNDER NORMAL CONDITIONS

Normal driving conditions are conditions encountered on a day-to-day basis that may cause mishaps. Be aware of these conditions and drive in a defensive driving mode at all times.

TURNING

Some mishaps are caused by drivers who do not make turns correctly. To make a turn safely, follow these guidelines:

1. Never make last minute turns.
2. Be aware of what is going on around you. Check your mirrors (rear view and sides).
3. When planning to make a turn at an intersection, move into the correct turning lane prior to approaching the intersection. For a right turn, the correct lane is the one next to the right edge of the roadway. Should you be on a two-lane road with traffic in both directions, a left-hand turn should be approached from the right half of the roadway nearest the center line.
4. Signal at least 100 feet before you turn.
5. Make your turn at a safe speed.
6. Stay in the proper lane when turning. Vehicles coming from the opposite direction have the right-of-way.
7. Finish your turn in the proper lane. (See fig. 5-2.)

PASSING

When overtaking and passing other vehicles on the road, observe the common rules of passing. Use extreme caution whenever passing a vehicle, because the view immediately beyond the other vehicle is blocked on that side. The greater the speed of the vehicle ahead, the more road space and time is required to overtake and pass the vehicle.

The following are restrictions for overtaking and passing:

1. Do not pass to the right of another vehicle, except on multiple-lane, divided highways (more than two lanes of traffic moving in one direction) and **only then if passing is permitted;** use extreme caution in such instances.
2. Do not pass at an intersection or railroad crossing.
3. Do not pass on a hill or curve, except on multiple-lane, divided highways.
4. Do not pass a vehicle signaling to turn or to move into your lane of traffic, or one that has started to overtake and pass another vehicle.
5. Do not pass if the center line of the road is solid on your side.
6. Do not pass if the highway is divided by two solid lines.
7. Do not pass if the single center line is solid.

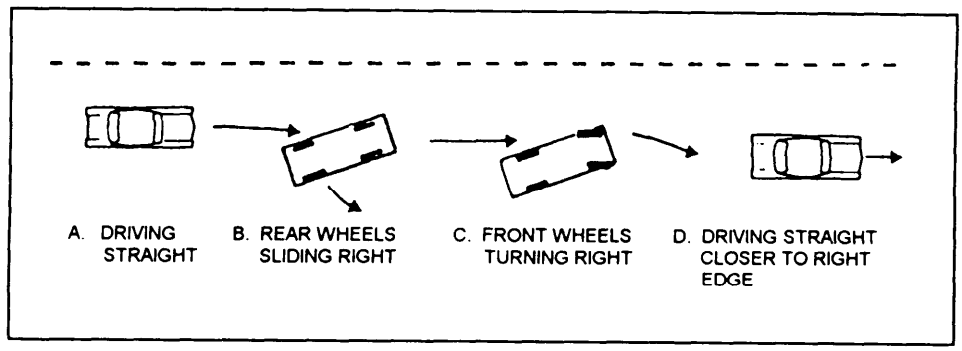

Figure 5-1.-Correcting a skid.

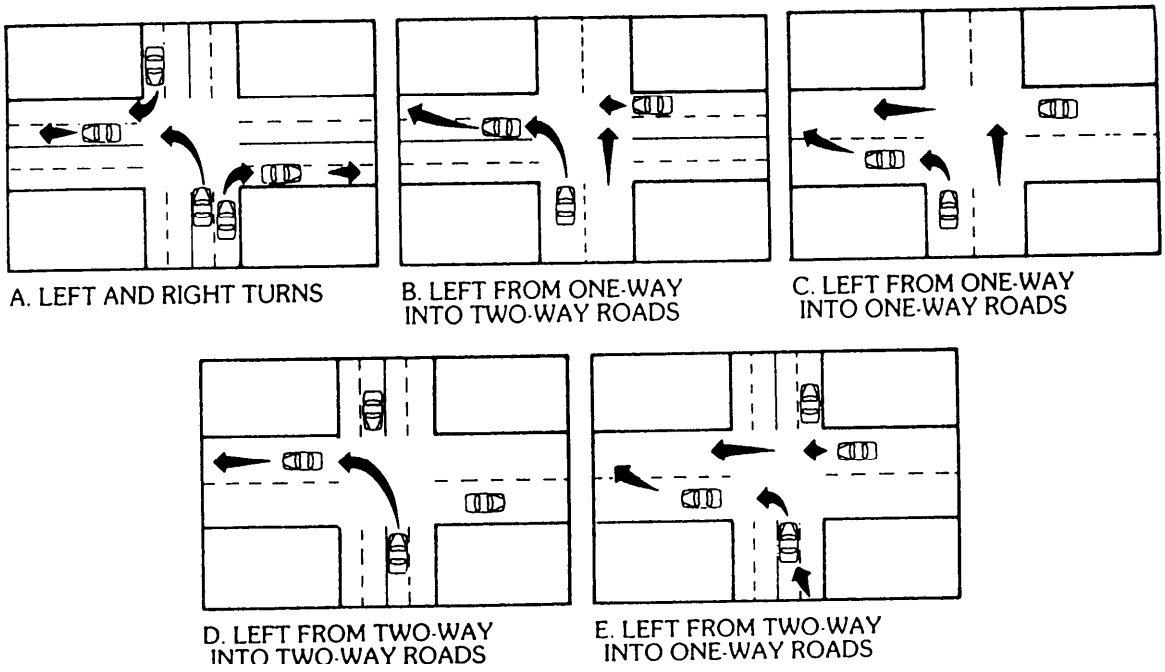

Figure 5-2.—Proper turning.

PARKING

When parking in the parking lane on a street, you should move as faraway from traffic as possible. Where there is a curb, pull close to it; you must not park more than 1 foot away. Always park on the right side of the roadway, unless it is a one-way street.

Make sure your vehicle cannot roll. Set the parking brake, and shift to park with an automatic transmission or reverse with a manual transmission. Turn the front wheels to keep your vehicle from rolling into the street. (See fig. 5-3.) Before you exit your vehicle, look over your shoulder to the rear to make sure the way is clear.

BACKING UP

Backing into other vehicles, objects, power lines, or people is considered negligence on the part of the operator. To avoid backing mishaps, you should use the common practices that are used in the NCF. These practices are as follows:

1. Blow the horn at least twice before reversing the vehicle. This alerts personnel in the surrounding area that a vehicle is preparing to backup.
2. Exit the vehicle and survey the area for items you cannot see from the cab of a truck or equipment before backing in an unfamiliar area. Check the following: low power lines, fire hydrants, warning poles, guy wires, parked vehicles, and other obstacles.
3. Use a backup guide (signal person). The backup guide signals you from the rear of your vehicle as you perform your backing operations. Survey the area and communicate with the backup guide so you both have an understanding of the backing operation.

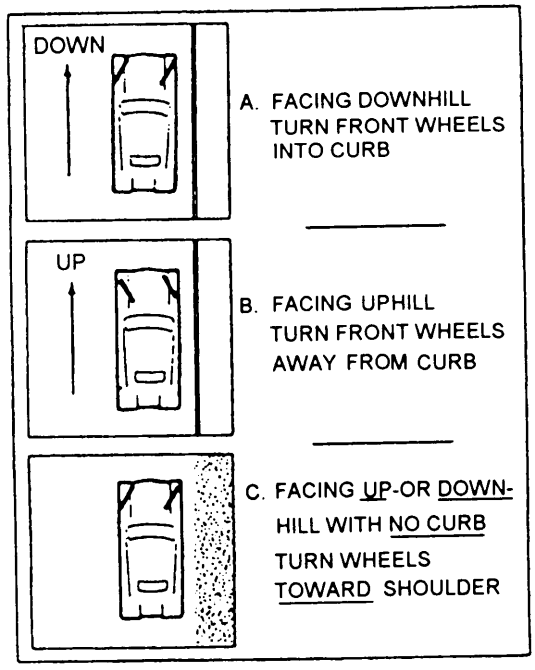

Figure 5-3.—Positioning the wheels of a parked vehicle.

NOTE: A majority of the backing mishaps that have occurred in the NCF could have been avoided had the operators used a backup guide.

4. Ensure the reverse signal alarm works when you make the prestart operational inspection. If your vehicle is equipped with a reverse signal alarm, it must work during the entire backward movement of the vehicle.

EXPRESSWAYS

Expressways are designed for high-speed driving, and to avoid mishaps on them, drivers must be more skillful and alert. All expressway entrances have three basic parts: an entrance ramp, an acceleration lane, and a merging area. (See fig. 5-4.)

On the entrance ramp, begin to speed up and check for an opening in traffic. Be sure to signal before entering. As the ramp straightens into the acceleration lane, continue to speed up. Try to adjust your speed so you can move into traffic. Merge into traffic when you can do so safely. You must yield the right-of-way to traffic on the expressway. You cannot always count on other drivers moving over to give you room to enter, but do not stop on an acceleration lane unless traffic is heavy and there is no space for you to enter safely.

When traveling on an expressway, you should never exceed the posted speed limit and should maintain the distance between vehicles needed for safe stopping. Avoid highway hypnosis by taking rest stops and opening vents or windows. Should you have and emergency situation develop, you should get the vehicle off the expressway as fast as safely possible. After coming to a stop, you should look behind you for oncoming or passing traffic before opening any door on the vehicle. When safe to do so, exit the vehicle and place flasher lights or flares behind the vehicle to warn other motorists.

When you are leaving expressways, get in the proper lane well before the turnoff, and use turn signals to warn other drivers. Slow down in the deceleration lane only. Check the posted speed for the exit ramp. (See fig. 5-5.) Be prepared to obey posted signs like stop, yield, or merge. Should you miss your exit, do not stop or backup to the ramp. You must go to the next exit to turn around.

PERIODIC STOPS

Driving for long distances or operating equipment for long periods of time can become hypnotic. You need to stop at least every couple of hours and walk around your vehicle to wake up and loosen up. This improves your awareness and allows you to operate the equipment more safely.

While you are stopped and walking around, look over your vehicle; give it a quick safety inspection.

1. Look at your tires. Check the lug nuts and ensure they are tight.
2. Listen for any air leaks. Look for leaks that may occur during operation from the engine, transmission, or differential.
3. Look at the general condition of your vehicle.
4. Check the load to see if it has shifted.

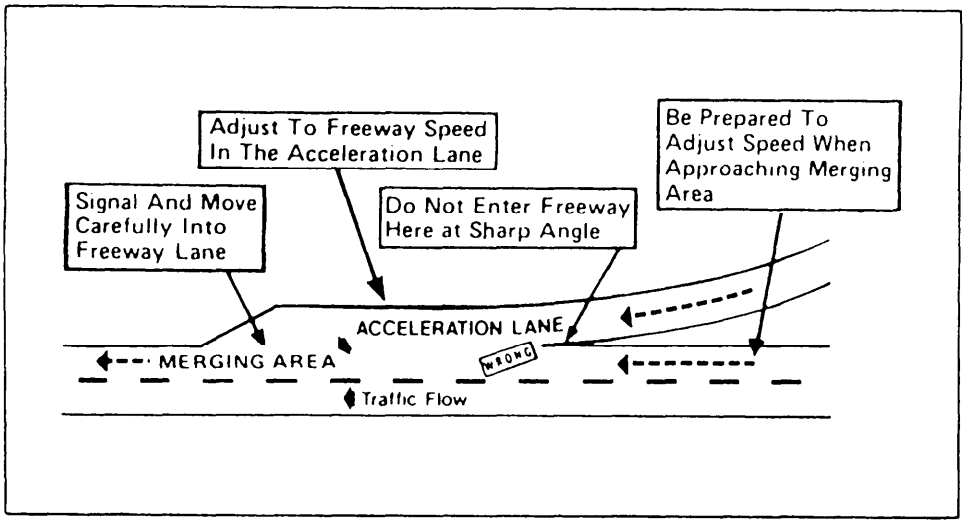

Figure 5-4.—How to enter an expressway safely.

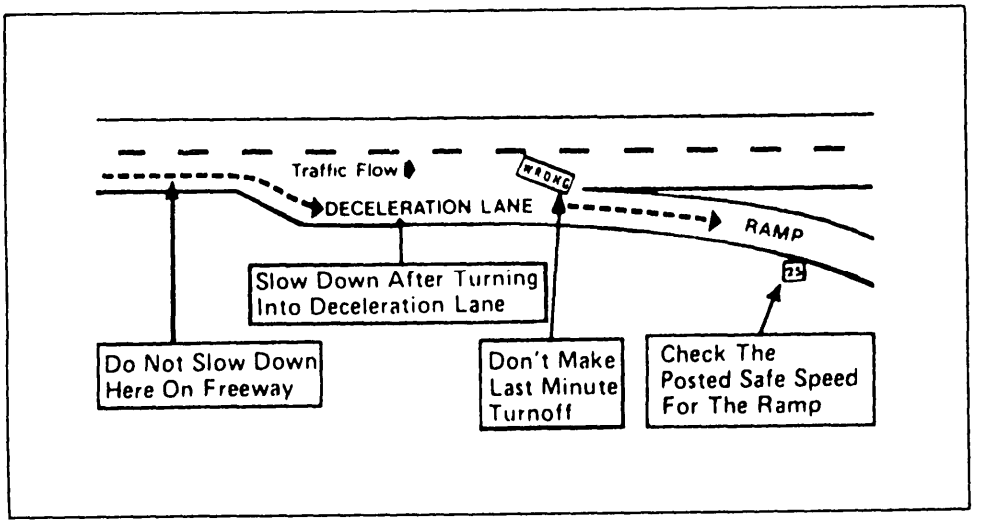

Figure 5-5.—How to exit an expressway safely.

5. Ensure your vehicle is safe to operate the remainder of your shift.

Check your physical condition. You, as the operator, have to be honest with yourself. Are you physically able to drive or operate the equipment for the remainder of the shift? Any mishap you have on the public road or on the jobsite that affects the community reflects negatively not only yourself, but the Navy as well. Stay alert when driving or operating. Be a good representative.

DRIVING UNDER HAZARDOUS CONDITIONS

Driving under hazardous conditions requires special skills and your undivided attention. The following paragraphs contain some guidelines intended to make you a good operator under adverse driving conditions.

SNOW AND ICE

Snow and ice severely limit the traction of a vehicle. When you are moving over fresh snow, maintain a slow, steady speed. Rapid acceleration is likely to cause skidding or cause the wheels to dig in. Should your vehicle become stuck in a hole in the snow, rocking it back and forth by shifting from forward to reverse may enable you to start again. Brakes, when used, should be applied lightly and released quickly if skidding begins.

Hard-packed snow or ice is more dangerous to drive on than fresh snow. To increase traction, put chains on all driving wheels. Snow tires are not much help on ice, as they add little or no traction and give you a false feeling of security. Deflating the tires a bit assists in preventing skidding.

Snow and ice affect visibility, stopping distance, maneuverability, and vehicle control. For driving under such conditions, you should take the following precautions:

1. Adjust the speed of the vehicle to existing conditions.
2. Under normal conditions, allow at least one car length between vehicles for each 10 miles per hour (mph) of speed you are traveling at. Increase the normal safe distance between vehicles to allow for hazardous conditions.
3. Use tire chains or snow tires on ice or snow; however, remember that they are only an aid to increase traction and do not eliminate the necessity for added caution.
4. Slow down when approaching bridges, overpasses, and shady areas in the road; surfaces in such areas often freeze before regular roadway surfaces do and remain frozen longer.
5. Keep the outside of the windshield and windows clear of snow, ice, and frost at all times, and use the vehicle defroster to improve visibility. Turn on headlight and use extreme caution when driving in fog.
6. Apply brakes with a light pumping action to prevent skidding and use engine compression to help control the vehicle.

7. Signal well in advance to warn others of an intended stop or turn.

WET ROADS

When driving through water, reduce speed to prevent the brake drums, engine, and ignition from getting wet. Apply foot pressure on the brake pedal just before entering and during passage through water deep enough to enter the brakes. Test the brakes for effectiveness immediately after leaving the water. If water has entered the brake drums and wet the linings, drive very slowly while gently applying sufficient pressure on the brake pedal to cause a slight drag, thereby squeezing the brake linings against the drums and forcing the water out of the linings.

Most roads are more slippery just after it begins to rain. This is because oil, that has dropped from vehicles traveling the road, forms a film on the road. Under these conditions, an operator should proceed at a slow speed because at least twice the normal stopping distance is needed to stop a vehicle.

When roads are wet, your tires may ride on a thin film of water, like skis. This condition is called **hydroplaning** and you can easily lose control and skid when your tires are not touching the road. Keep your tires on the road by slowing down when it rains and by having the correct air pressure and good tread on your tires.

NIGHT DRIVING

Some operators try to drive just as fast at night as they do in the daytime. Speed should always be reduced for nighttime driving.

NIGHT DRIVING IS TWO TO THREE TIMES MORE DANGEROUS THAN DAY DRIVING. Fatigue and sharply reduced vision are the primary causes for increased danger. The steady hum of the motor and the darkness on the road ahead tend to lull us to sleep at the wheel. Wide-awake driving is necessary at all times and especially at night, since we cannot see as well at night as we can in daylight. Driving safely after dark requires particular skills and extra care.

The following are requirements and practices applicable to night driving which should be carefully observed:

- Lower the beams of your headlights when within 500 feet of an approaching vehicle.
- Lower the beams of your headlights when within 200 feet of a vehicle in front of you.
- Lower the beams of your headlights when you are driving on well-illuminated streets.
- Use your low-beam headlights when driving in fog, and reduce your speed. Driving with your high beams in fog is like shining your high-beam headlights on a mirror—light is reflected back into your eyes and blinds you.
- Use your high-beam headlights when it is safe and legal. Using low-beam highlight all the time cuts down on your ability to see ahead. Use your high-beams when you are **NOT** within 500 feet of an approaching vehicle.
- Avoid looking directly into the lights of oncoming vehicles. Instead, watch the right-hand edge of the road.
- Keep your headlights properly adjusted so the lower beams are not aimed upward into the approaching driver's eyes.
- Keep your windshield clean.
- Slow down when facing the glare from approaching headlights.
- Be sure you can stop, when necessary, within the vision distance of the headlights of your vehicle, and watch constantly for pedestrians along the roadside.
- Use your headlights from one-half hour before sunset to one-half hour after sunrise and at any time visibility is reduced.

FOG OR SMOKE

Driving in fog or smoke greatly reduces visibility. Use the techniques described earlier for driving on wet roads. Again, slow down, turn on your low-beam headlights, and be ready for a fast stop.

DRIVING UNDER SPECIAL CONDITIONS

You may have to operate a vehicle in unique conditions. The way you perform under these conditions are discussed in the following paragraphs.

SAND

The major problem sand presents is to gain traction without digging in. Sand can be stabilized with a large volume of water but loosens as soon as it dries out. Often, tires spin and dig into the sand rapidly which causes a jerking motion in the drive line.

NOTE: This jerking motion can cause severe damage to axles, differentials, and propeller shafts. All-wheel drive vehicles have less difficulty, but they consume considerable power.

Should you have to operate in sand, there are some actions you can take to help you out when a winch is not available. Partially deflate your tires; this gives your tires a wider footprint for traction. You can use mats of brush, wire, grass, lumber or anything that can "bridge over" and allow you to spread the load of your vehicle over a larger area.

CROSS-COUNTRY

Driving cross-country can produce many problems. Should you have to drive cross-country, it is best to have someone walk in front of your vehicle to look for holes, stumps, and ditches that may damage your vehicle. Proceed slowly and use the lowest gear possible. Avoid wet, marshy areas if possible because a marsh will crust over and break through if you drive over it. When it breaks through, there is little you can do but call for assistance to be towed.

Watch out for stumps, rocks, or anything on which you may get high center. Sometimes it is better to keep your tires on large rocks and go over them, rather than straddle them. Stumps may be cut off for your vehicle to clear.

DRIVING HOURS

Driving hours are regulated by the U.S. Department of Transportation, Code of Federal Regulations, Title 49. These regulations are reflected in the *Federal Motor Carrier Safety Regulations Pocketbook, ORS-7A*. You are restricted to drive no longer than 10 hours in a 15-hour period after 8 hours off duty. You, the operator, are responsible for the safe operation of your vehicle.

As a safety measure, an operator should take breaks or rest stops when becoming fatigued or sleepy. After parking the vehicle, get out and walk around to stretch your muscles. Rest stops are especially important on a long trip requiring many hours of driving.

WARNING

Extended periods of driving often results in **driver fatigue.** Physical and mental fatigue brought on by extended periods of time behind the wheel is a frequent problem encountered by operators. If operators are exhausted, they may doze at the wheel and lose control of the vehicle, resulting in a serious or fatal mishap.

MOUNTAIN DRIVING

The force of gravity plays a major role in mountain driving. If you have a heavy load or a fully loaded bus, you must select lower gears to climb the hills. When going down steep hills, the pull of gravity speeds you up. You must go slow so your brakes can hold you back without overheating. If the brakes become too hot, they may start to "fade." This means that you have to apply them harder and harder to get the same stopping power. When the brakes continue to be used hard, they continue to fade until you cannot slow down or stop at all.

Use of Gears

No matter what size of vehicle you are descending long, steep grades in, going too fast can cause your brakes to fail. Lower gears allow engine compression and friction to help slow the vehicle. This is true whether you have an automatic or a manual transmission.

When you are operating a large vehicle with a manual transmission or a fully loaded bus, do not wait until you have started down a hill to shift down. You could get hung up in neutral and find yourself coasting, which is not only illegal but is also dangerous. Remember: Choose the right gear before starting down a hill.

For older trucks, the rule of thumb for choosing gears is to use the same gear going down a hill that you would use to climb the hill. New trucks have low friction parts and streamlined shapes for fuel economy and often have more powerful engines. This allows them to go up hills in higher gears. They also have less friction and air drag to hold them back when going down a hill. For this reason, operators of newer trucks often have to use **lower gears going down** a hill than needed to go up the hill.

Proper Braking

When going downhill, brakes tend to heat up. When engaged, the brake pads and shoes rub against the brake

disc and drums, creating heat. Brakes are designed to withstand intense heat; however, brakes can fail from excessive heat if you try to slow down from a high speed too many times too quickly. Brakes fade (have less stopping power) when they get hot and may not slow the vehicle.

The correct way to use your brakes for long downhill grades is to go slow enough that fairly light use of the brakes prevents your speed from increasing. When you go slow, the brakes can cool down.

Some operators think that backing off on the brakes from time to time (fanning) allows them to cool enough to prevent overheating. Tests have proven this is not true. Brake drums cool slowly, so the amount of cooling between applications is not enough to prevent overheating. This type of braking requires heavier brake pressure than steady application does. The heavier pressure used on the brakes builds up more heat than the light continuous pressure does; therefore, select the right gear, go slow, and maintain a lighter, steadier use of the brakes.

Escape Ramps

Escape ramps are constructed on most steep mountain grades. They are used to stop runaway vehicles safely without injury to drivers or passengers. Escape ramps use along bed of loose soft material, such as pea gravel or sand, to slow a runaway vehicle. Sometimes, they are used in combination with an upgrade.

VEHICLE RECOVERY

Recovery is a major operation. During any recovery operation, always use a proven procedure. A haphazard approach to a recovery problem or the use of a trial-and-error method can be a costly mistake. Such a mistake can "deadline" the disabled vehicle longer than necessary, cost valuable time, damage equipment, and injure personnel. Self-recovery of vehicles, recovery with wreckers, and recovery with like-vehicles are discussed in this section.

WRECKERS

Recovery, using wrecker trucks, should be performed by trained recovery personnel of Alfa company or the transportation division. An understanding of the ability of the vehicle to winch, lift, and tow is very important. For in-depth information, refer to the operator's manual that relates to the operation of specific equipment and their specific abilities.

Mired Truck

The recovery of a mired truck using a wrecker truck is not always an easy task because it involves the resistance of the load, the approach to the load, and the distance between the wrecker and the mired vehicle. Use a direct pull if the resistance created by the mired vehicle is less than the winch capacity of the wrecker.

CAUTION

Do not hook the winch cable around the bumper on a vehicle. Wrapping the tow cable around the bumper of a mired vehicle will result in a bent bumper.

An example of a simple winching operation is shown in figure 5-6. Some winching operations are more difficult. The mired truck may have a resistance greater than the winch capacity of the wrecker. Also, the wrecker may not be able to align itself with the truck due to terrain. If so, use a 2:1 mechanical advantage and a change of direction pull, as shown in figure 5-7.

Nosed Truck

The recovery of a nosed truck using a wrecker truck may require only a towing operation. Some situations may require all three of the capabilities (winching,

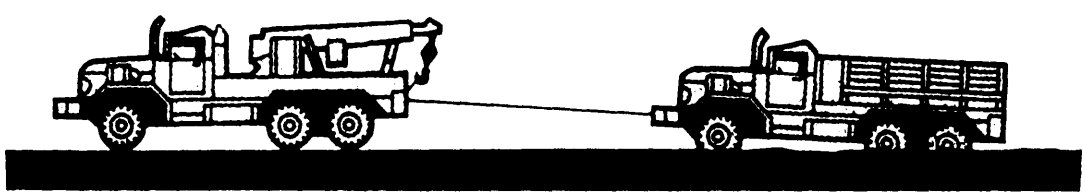

Figure 5-6.-Simple winch operation (direct pull).

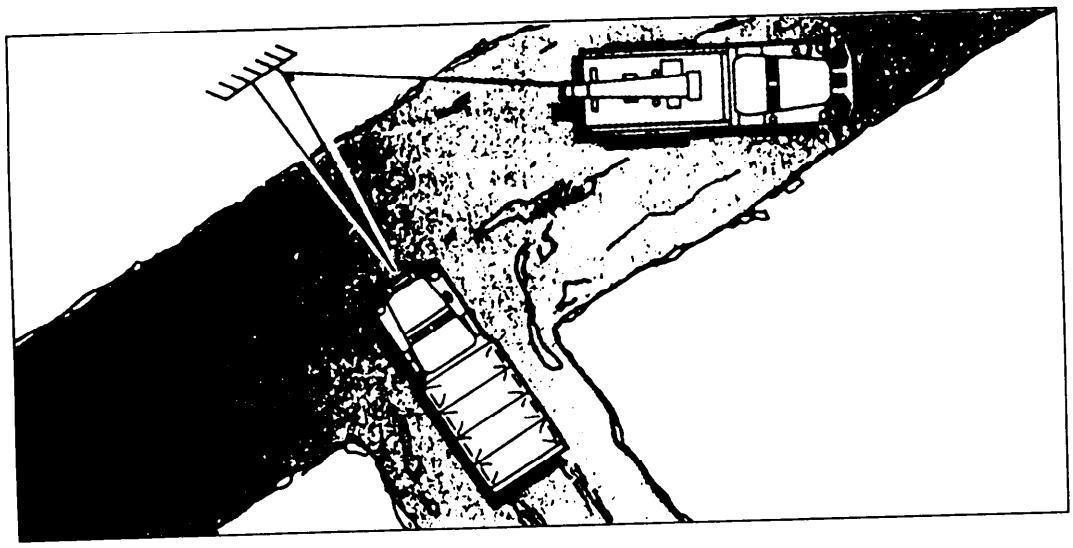

Figure 5-7.—Mechanical advantage and change of direction (winching).

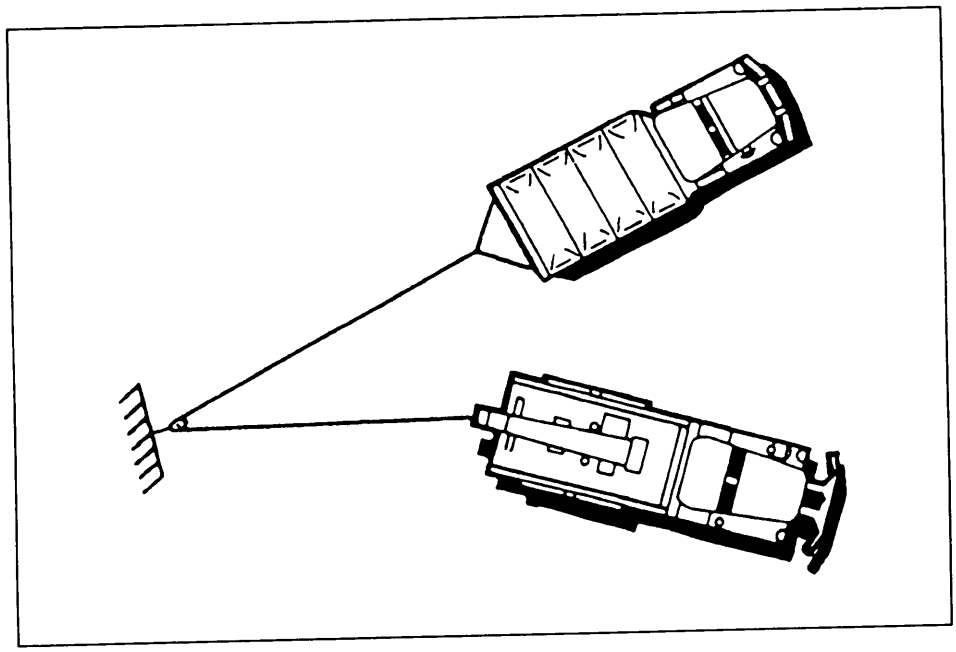

Figure 5-8.—Winching by change of direction

lifting, and towing) of the trucks to complete the recovery.

Figure 5-8 shows a mechanically disabled 2 1/2-ton truck nosed off a narrow road in such a way that the wrecker cannot be positioned directly behind the vehicle. You may notice that the winch cable is not running in a direct straight line with the winch. On a normal winch, this angle causes the wire rope to wind off the side (flange) of the winch drum; however, the wrecker winch has a level winding device that offsets the difference. Other vehicles with winches do not have this device.

Overturned Truck

To upright an overturned truck with a wrecker truck, you should use a sling method of attachent, because a pulling force applied to only one point of the frame can result in a bent frame. A sling lifting attachent is made up of either two utility chains or two 1-inch fiber ropes. The sling ends are attached to the front and rear lifting devices on the high side of the overturned truck. Then the winch cable is attached to the center of the sling. A holding force is required to prevent the overturned vehicle from crashing onto its wheels. The holding force

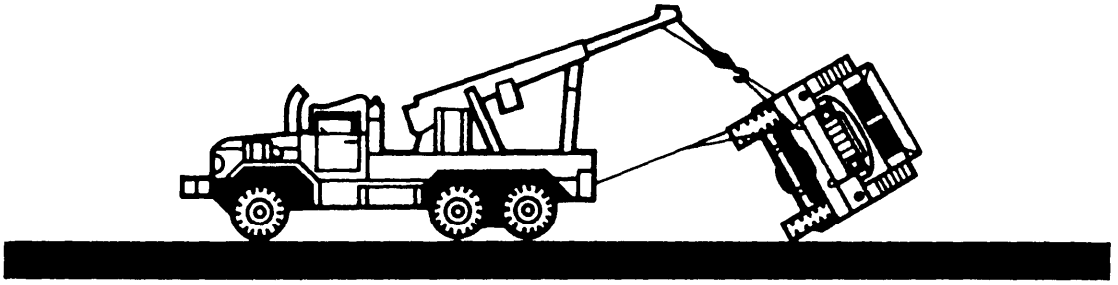

Figure 5-9.—Righting an overturned truck.

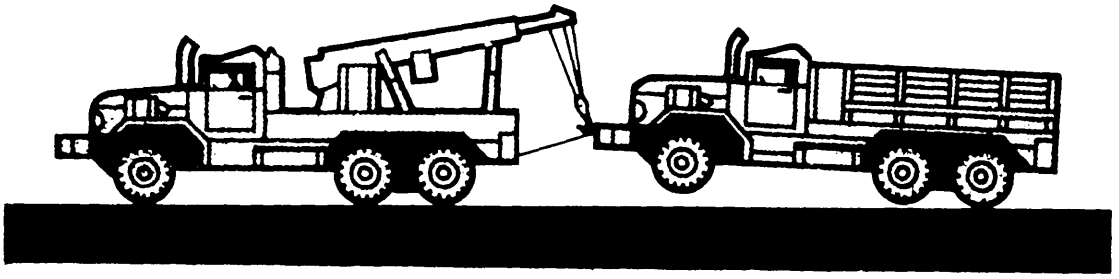

Figure 5-10.—Highway tow.

could be another vehicle, the wrecker boom, or a rope block and tackle with manpower.

The attachment for the holding force is a holding sling attached to the same points on the overturned truck as the pulling sling. The holding sling is then attached to the holding force with wire rope, rope, or chain, making sure the holding force is attached to the center of the sling. If a holding vehicle is not available, use the wrecker boom to hold the load, as shown in figure 5-9.

Apply power gradually to the winch until the overturned truck is past the vertical position. Then lower the truck on its wheels with the hoist winch, rather than booming out with the crane.

NOTE: Maximum use of the boom jacks and outriggers should be employed when this method is used.

Towing

A wrecker truck is capable of towing vehicles in several ways. The proper procedures and safety guidelines for towing are important factors in preventing damage to vehicles and injury to personnel. The basic procedures and guidelines for highway towing and cross-country towing are as follows:

HIGHWAY TOW.— Attach the tow bar to the lifting shackle eyes of the disabled vehicle and the wrecker truck tow pintle. All wheels of the towed vehicle should be on the ground. With the tow bar, a driver is not required in the towed vehicle. (See fig. 5-10.)

CROSS-COUNTRY TOW.— Over rough terrain, across-country tow controls the towed vehicle well. The procedure for rigging for the cross-country tow is as follows: (1) attach a chain lifting sling or the hoisting bar between the front lifting shackles of the truck; (2) attach a tow chain from the wrecker tow pintle to the lifting shackles of the disabled truck; (3) place the hoist hook block in the lifting sling approximately 12 inches off the ground; (4) extend the boom to remove the slack from the tow chain, and keep the towed vehicle from ramming into the rear of the wrecker truck; and (5) support the boom with the shipper braces to prevent impact loads on the crane mechanisms. (See fig. 5-11.)

If the front end of the vehicle is damaged, use cross-country towing even though the disabled vehicle is being towed on the highway. Use the tow bar instead of a tow chain.

SELF- AND LIKE-VEHICLE RECOVERY

A winch-equipped mired vehicle can perform self-recovery. Attach the snatch block to a suitable anchor and the free end of the cable to a chain sling connected to both of the front lifting shackles of the mired vehicle. A fixed block provides a mechanical advantage on a self-winching operation, even though the sheave of the block is performing as a first-class lever. (See fig. 5-12.)

Use a similar wheeled vehicle as the source of effort to perform recovery by towing and winching. For vehicles not equipped with lifting shackles, attach a tow chain to the main structural members. Before towing or recovering a disabled vehicle, check the vehicle operator's manual to ensure that all physical and safety features are considered. This must be done to prevent additional damage to the disabled vehicle.

To recover a mired truck by towing with a similar vehicle, use a tow chain or a wire rope sling between the towing vehicle and the mired vehicle. Attach it to one lifting shackle of the mired vehicle and through the tow pintle on the towing vehicle.

Apply power slowly to prevent shock to the towing device and lifting shackles. If one towing vehicle cannot attain sufficient towing effort to overcome the resistance, use another towing vehicle in tandem with the first, as shown in figure 5-13.

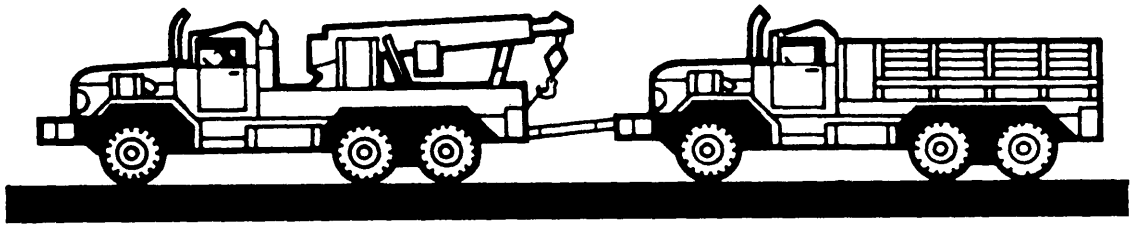

Figure 5-11.-Cross-country tow.

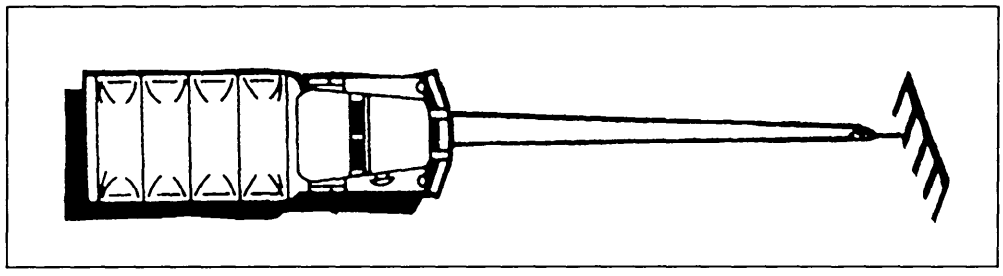

Figure 5-12.-Self-winching.

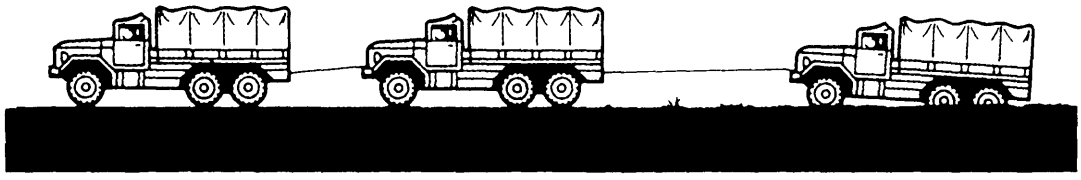

Figure 5-13.—Like-vehicle recovery.

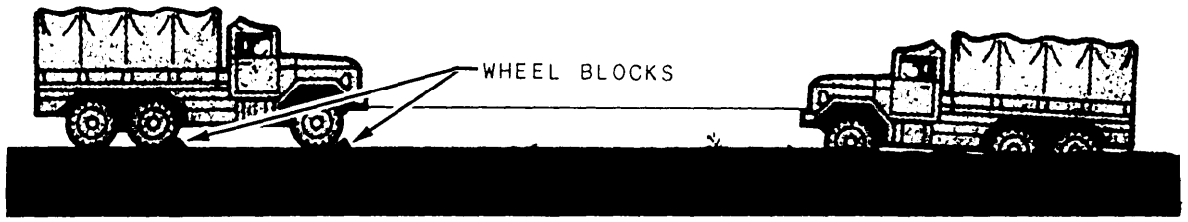

Figure 5-14.—Winching with a like-vehicle.

To winch a mired truck, use a truck with a winch of equal or greater capacity to perform the recovery. Often, the winching or recovery vehicle must be anchored by more than its own weight. Place wheel blocks, chocks, or natural material in front of the front wheels of the recovery vehicle. (See fig. 5-14.) For more information on vehicle recovery, refer to *Vehicle Recovery Operations, FM 22-20.*

INTERNATIONAL SIGNALS AND ROAD SIGNS

The international system used for traffic control devices emphasizes pictures and symbols, rather than written messages. Symbols have several advantages over word messages, such as the following: (1) they provide almost instant communication with the driver, because they can be understood at a glance without having to be read; and (2) they overcome language barriers which is important because of the growth of international travel. Familiarity with the symbolic signs can help Americans traveling abroad as well as foreigners visiting the United States. As the new signs are introduced, companion word messages will also be used until the public becomes accustomed to the new system. Figure 5-15 shows several traffic signs and markings that are used on U.S. roadways.

Additional international signals and road signs are illustrated in appendix II. The color and shape of these signs are important.

COLORS

Red indicates a stop or a prohibition. **Green** shows movement permitted or gives directional guidance. **Blue** is for signs leading to motorist services. **Yellow** indicates a general warning. **Black on white** indicates regulatory signs, such as those for speed limits. **Orange** conveys construction and maintenance warnings. **Brown** is for public recreation and scenic guidance.

SHAPES

Diamond-shaped signs signify a warning. **Rectangular** signs with the longer dimension vertical contain a traffic regulation. **Rectangular** signs with the longer dimension horizontal contain guidance information. An octagon means stop; an **inverted triangle** means yield. A **pennant** means no passing; a **pentagon** shows the presence of a school. A **circle** warns of a railroad crossing.

PAVEMENT MARKINGS

Road markings on highways are yellow and white; however, each has a different meaning. White lines separate lanes of traffic going in the same direction. Yellow markings separate lanes of traffic traveling in different directions.

Solid yellow lines indicate there should be no passing from either direction. **Broken yellow lines** indicate that you can pass with caution. Remember: You are traveling on a highway with traffic going in both directions.

Solid white lines indicate there should be no lane changing. They are used at stoplights, turning lanes, and intersections on highways. **Broken white lines** indicate that cautious lane changes may be made.

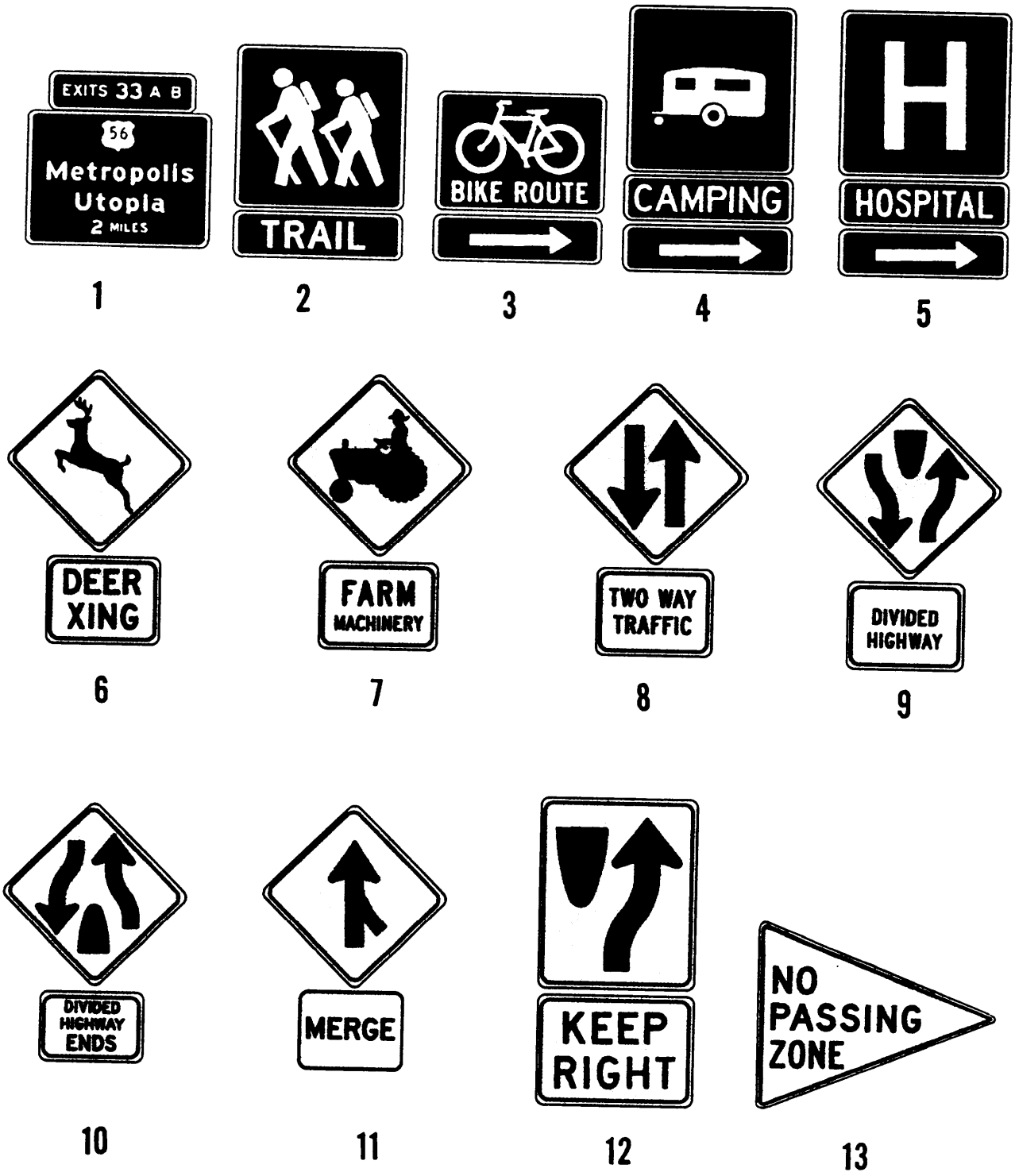

Figure 5-15.—Traffic signs and markings.